

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Greg A. Dunko
Serial No.: 10/823,069
Filed: April 13, 2004

Confirmation No.: 3975
Group Art Unit: 2618
Examiner: Lu, Zhiyu

For: **PORTABLE ELECTRONIC DEVICES INCLUDING MULTI-MODE
MATCHING CIRCUITS AND METHODS OF OPERATING THE SAME**

Date: October 1, 2007

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APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed June 7, 2007 and the "Notice of Panel Decision from Pre-Appeal Brief Review" mailed August 31, 2007.

Real Party In Interest

The real party in interest is assignee Sony Ericsson Mobile Communications AB, Lund, Sweden.

Related Appeals and Interferences

Appellant is not aware of any appeals or interferences that would be affected by the present appeal.

Status of Claims

Appellant appeals the final rejection of Claims 1, 3, 5-7, 9, 11-14, 16, 18-20, 22, 24 and 26-36 as set forth in the Final Office Action of March 7, 2007 (hereinafter "Final Action"). Claims 1, 3, 5-7, 9, 11-14, 16, 18-20, 22, 24 and 26-36 stand rejected. Claims 2, 4, 8, 10, 15, 17, 21, 23 and 25 have been canceled. The claims involved in the appeal as included in Appellant's response to the Office Action of August 25, 2006 are attached hereto as Appendix A.

Status of Amendments

All Amendments filed in the present Application have been entered. No Amendments have been made After Final. The attached Appendix A presents the pending claims and the corresponding status of each of the pending claims.

Summary of Claimed Subject Matter

Independent Claim 1 is directed to a portable electronic device including a housing and an antenna associated with the housing. A multi-mode matching circuit operatively associated with the antenna is also provided. The multi-mode matching circuit is configured to operate in a first mode when the housing of the portable electronic device is in a first configuration and in a second mode when the housing of the portable electronic device is in a second configuration. A sensor operatively associated with the multi-mode matching circuit is also provided. The sensor is configured to detect the first configuration of the housing of the portable electronic device and/or the second configuration of the housing of the portable electronic device. The multi-mode matching circuit is further configured to adjust at least one parameter of the multi-mode matching circuit responsive to the first and/or second detected configurations of the housing of the portable electronic device. The at least one parameter is stored in a lookup table. A processor operatively associated with the sensor is also provided. The processor is configured to locate the at least one parameter in the lookup table using the first and/or second detected configuration of the housing of the portable electronic device as a pointer for an entry in the lookup table. *See Figure 1 and Specification, page 2, line 31-page 3, line 10 and page 3, lines 15-19.*

Independent Claim 7 is directed to a mobile terminal including a housing and an antenna associated with the housing. A multi-mode matching circuit operatively associated

with the antenna is provided in the housing. A sensor operatively associated with the multi-mode matching circuit is provided and is configured to detect a position of the antenna relative to the housing and/or a configuration of the housing of the mobile terminal. The multi-mode matching circuit is configured responsive to the detected position of the antenna and/or the configuration of the housing of the mobile terminal. The multi-mode matching circuit is configured to operate in a first mode when the detected position is a first detected position relative to the housing and/or the housing of the mobile terminal is in a first configuration and in a second mode when the detected position is a second detected position relative to the housing and/or the housing of the mobile terminal is in a second configuration. The multi-mode matching circuit is configured by adjusting at least one parameter of the multi-mode matching circuit responsive to the first and/or second detected position of the antenna and/or the first and/or second configuration of the housing of the mobile terminal. The at least one parameter is stored in a lookup table. The mobile terminal further includes a processor operatively associated with the sensor. The processor is further configured to locate the at least one parameter in the lookup table using the first and/or second detected position and/or the first and/or second configuration as a pointer for an entry in the lookup table. *See* Figure 1 and Specification, page 2, line 31-page 3, line 10 and page 3, lines 15-19.

Independent Claim 14 is directed to a method of operating a portable electronic device including detecting a configuration of a housing of the portable electronic device. *See* Figure 5, block 500 and Specification, page 9, line 31-page 10, line 6. The method further includes adjusting a multi-mode matching circuit based on the detected configuration of the housing of the portable electronic device. The multi-mode matching circuit is operatively associated with an antenna of the portable electronic device. The multi-mode matching circuit may be adjusted by adjusting at least one parameter of the multi-mode matching circuit responsive to the detected configuration of the housing of the portable electronic device. The at least one parameter is stored in a lookup table. The at least one parameter is located in the lookup table using the detected configuration as a pointer for an entry in the lookup table. *See* Figure 5, block 510, Specification, page 10, lines 8-10, Figure 6, block 620 and Specification, page 10, lines 26-28.

Independent Claim 22 is directed to a method of operating a mobile terminal including detecting a position of an antenna relative to a housing of the mobile terminal and/or a configuration of the housing of the mobile terminal. *See* Figures 5, block 500,

Specification, page 9, line 31-page 10, line 6, Figure 6, block 600 and Specification, page 10, lines 11-16. A multi-mode matching circuit is configured responsive to the detected position of the antenna and/or the configuration of the housing of the mobile terminal. The multi-mode matching circuit is operatively associated with the antenna of the mobile terminal and is configured adjust at least one parameter of the multi-mode matching circuit responsive the detected position of the antenna and/or the configuration of the housing of the mobile terminal. The at least one parameter is stored in a lookup table. The at least one parameter is located in the lookup table using the detected position and/or configuration as a pointer for an entry in the lookup table. *See* Figure 6, blocks 610-630 and Specification, page 10, line 16-page 11, line 8.

Independent Claim 31 is directed to a portable electronic device including a housing and an antenna associated with the housing. A multi-mode matching circuit operatively associated with the antenna is also provided and is configured to operate in at least three modes corresponding to respective first through third configurations of the housing. *See* Figure 1, elements 23, 48 and 27 and Specification, page 5, line 21 to page 7, line 17.

Dependent Claim 34 further recites a camera that is configured to protrude from the portable electronic device during camera functionality and to retract when not in use. The first through third configurations of the portable electronic device correspond to relative positions of the camera. *See* Specification, page 9, lines 1-4.

Independent Claim 35 is directed to a method of operating a portable electronic device including detecting a configuration of a housing of the portable electronic device. *See* Figures 5, block 500, Specification, page 9, line 31-page 10, line 6, Figure 6, block 600 and Specification, page 10, lines 11-16. The method further includes adjusting a multi-mode matching circuit based on the detected configuration of the housing of the portable electronic device. The housing of the portable electronic device has at least three configurations. The portable electronic device includes a portable electronic device having a jack-knife configuration, where the at least three configurations correspond to different configurations of the jack-knife configuration. *See* Figure 6, blocks 610-630 and Specification, page 10, line 16- page 11, line 8.

Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-3, 5-7, 9, 11-14, 16, 18-20, 22, 24 and 26-30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 6,862,432 to Kim (hereinafter "Kim"). See Final Action, page 2.

2. Claims 31-33 and 35-36 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim in view of United States Patent Application Publication No. 2004/0185920 to Choi *et al.* (hereinafter "Choi"). See Final Action, page 6.

3. Claim 34 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kim in view of Choi and United States Patent Application Publication No. 2004/0110541 to Choo *et al.* (hereinafter "Choo"). See Final Action, page 7.

Argument

I. Introduction to 35 U.S.C. §102/§103 Analysis

Under 35 U.S.C. § 102, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (quoting *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Sys. Inc.*, 57 U.S.P.Q.2d 1057, 1061 (Fed. Cir. 2000). "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." M.P.E.P. § 2112 (citations omitted).

A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. See *Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991). In particular, the Court of Appeals for the

Federal Circuit held that a finding of anticipation requires absolute identity for each and every element set forth in the claimed invention. *See Trintec Indus. Inc. v. Top-U.S.A. Corp.*, 63 U.S.P.Q.2d 1597 (Fed. Cir. 2002). Additionally, the cited prior art reference must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention.

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v. Teleflex Inc.*, 550 U. S. 1, 15 (2007). A corollary principle is that, when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be unobvious. *Id.* at 12. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id.* at 13. A Court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 13. When it is necessary for a Court to look at interrelated teachings of multiple patents, the Court must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. *Id.* at 14.

Appellant respectfully submits that the pending independent claims are patentable over the cited references for at least the reason that the cited references do not disclose or suggest many of the recitations of the claims. The patentability of the pending claims is discussed in detail hereinafter.

A. Independent Claim 1, 7, 14 and 22 Are Patentable

As discussed above, Claims 1-3, 5-7, 9, 11-14, 16, 18-20, 22, 24 and 26-30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 6,862,432 to Kim. *See* Final Action, page 2. Appellant respectfully submits that many of the recitations of these claims are neither disclosed nor suggested by the cited references. For example, independent Claim 1 recites:

A portable electronic device, comprising:
a housing;
an antenna associated with the housing; and
a multi-mode matching circuit operatively associated with the antenna, the multi-mode matching circuit being configured to operate in a first mode when the housing of the portable electronic device is in a first configuration and in a second mode when the housing of the portable electronic device is in a second configuration;
a sensor operatively associated with the multi-mode matching circuit, wherein the sensor is configured to detect the first configuration of the housing of the portable electronic device and/or the second configuration of the housing of the portable electronic device and wherein the multi-mode matching circuit is configured to adjust at least one parameter of the multi-mode matching circuit responsive to the first and/or second detected configurations of the housing of the portable electronic device, and wherein the at least one parameter is stored in a lookup table; and
a processor operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first and/or second detected configuration of the housing of the portable electronic device as a pointer for an entry in the lookup table.

Independent Claims 7, 14 and 22 include similar recitations to the highlighted recitations of Claim 1. Appellant respectfully submits that at least the highlighted recitations of Claim 1 are neither disclosed nor suggested by Kim for at least the reasons discussed herein.

The Final Action states that Kim teaches all of the recitations of Claim 1. *See* Final Action, pages 2-3. In particular, Kim discusses a folder sensor 20 that determines if the housing is open or closed. A voltage value corresponding to the state of housing (open or closed) is stored in memory and the voltage is used to control the matching circuit. *See* Kim,

column 4, lines 2-10. In other words, Kim discusses storing one or more voltages in a memory. Thus, the solution discussed in Kim is specific to stored voltages and use of variable capacitance diodes.

In stark contrast, Claim 1 recites a multi-mode matching circuit that is configured to adjust at least one parameter of the multi-mode matching circuit and store the at least one parameter in a lookup table. Thus, the multi-mode matching circuit according to some embodiments of the present invention may include digitally programmable Resistors (R), Inductors (L), or Capacitors (C), which may be programmed based upon numerical values ("parameters") stored in a lookup table (not voltages). In other words, the parameters stored in the lookup table pointed to by the first and/or second detected configuration of the housing are the numerical values used to program the resistors, inductors and/or capacitors of the multi-mode matching circuit as needed.

The Advisory Action points to column 5, lines 18-64 as teaching the highlighted recitations of Claim 1. *See* Advisory Action, continuation sheet. As stated discussed in Kim:

The manufacturer of the portable radio telephone stores voltages for optimal antenna impedance matching both in a case opened condition and case closed condition to the non- volatile memory 31....

See Kim, column 5, lines 18-21 (emphasis added). Thus, as discussed above, Kim discusses stored voltages. In stark contrast, the adjusted at least one parameter recited in Claim 1 may be numerical values used to program the programmable Resistors (R), Inductors (L), or Capacitors (C) of the multi-mode matching circuit. Nothing in Kim discusses storing parameters as recited in Claim 1.

For at least the reasons discussed herein, Appellant respectfully submits that independent Claims 1, 7, 14 and 22 are patentable over Kim. Furthermore, Appellant submits that the dependent claims are patentable at least per the patentability of the independent base claims from which they depend. Accordingly, Appellant respectfully requests reversal of the rejections with respect to independent Claims 1, 7, 14 and 22 for at least the reasons discussed herein.

B. Independent Claims 31 and 35 are Patentable

As discussed above, Claims 31-33 and 35-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Choi. *See* Final Action, page 6. The Final Action admits that "Kim does not expressly disclose there are at least three configurations of the housing with corresponded [sic] three modes." *See* Final Action, page 6. However, the Final Action points to Choi as providing the missing teachings. *See* Final Action, page 6. Appellant respectfully submits that many of the recitations of these claims are neither disclosed nor suggested by the cited combination. For example, Claim 31 recites:

A portable electronic device, comprising:
a housing;
an antenna associated with the housing;
a multi-mode matching circuit operatively associated with the antenna, **the multi-mode matching circuit being configured to operate in at least three modes corresponding to respective first through third configurations of the housing.**

Claim 35 contains corresponding method recitations to the highlighted recitations of Claim 31. Appellant respectfully submits that at least the highlighted recitations of Claim 31 are neither disclosed nor suggested by the cited combination for at least the reasons discussed herein.

Choi discusses a method and apparatus for detecting a position of a folder in a rotation touch phone having a camera. *See* Choi, title. As discussed in Choi, this reference discusses a phone having four states, which can be sensed by three sensors. *See* Choi, Abstract. As illustrated by Table 1 of Choi, the sensed states are used to determine which elements of the phone should be turned on and/or off. Nothing in Choi discloses or suggests a multi-mode matching circuit being configured to operate in at least three modes corresponding to respective first through third configurations of the housing as recited in Claim 31.

Furthermore, Appellant respectfully submits that there is no motivation or suggestion to combine the cited references as suggested in the Final Action. The Final Action, states:

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate at least three opening positions and modes taught by Choi et al. into the portable electronic device of Kim, in order to provide more modes with auto-detection.

See Final Action, page 6. Appellant respectfully disagrees. If the statement in the Final Action were adequate to sustain the Office's burden, then anything that would "provide more modes with auto-detection" would be rendered obvious. This cannot be the case.

Accordingly, the statement in the Final Action with respect to motivation does not adequately address the issue of motivation to combine. Thus, it appears that the Final Action gains its alleged impetus or suggestion to combine the cited references by hindsight reasoning informed by Appellant's disclosure, which is an inappropriate basis for combining references.

In response to Appellant's arguments, the Advisory Action states:

Kim already teaches a portable electronic device having a multi-mode matching circuit operatively corresponding to two configurations of the housing. The only thing missing is having a third mode. And Choi et al. teach a portable electronic device having three configurations of the housing, which can also be detected by magnetic sensors. So, it would have been obvious to one of ordinary skill in the art to recognize that the portable electronic device of Kim is also capable of having a third configuration of the housing and a corresponded third mode impedance matching in light of Choi et al. for expanding housing configuration and optimizing impedance matching.

See Advisory Action, continuation sheet. Appellant respectfully disagrees. Choi uses the detection of the housing configuration to determine which elements of the phone should be turned on and/or off. Kim discusses impedance matching using voltages determined by whether the phone is opened or closed. These are completely different. Nothing in Choi, Kim or the combination thereof would motivate one of skill in the art to combine the references as suggested in the Final Action and/or the Advisory Action. The Examiner located Choi by using Appellant's disclosure as a road map, which is clearly improper as anything could be rendered obvious if the references are combined using hindsight.

For at least these reasons, Appellant respectfully submits that independent Claims 31 and 35 are patentable over the cited combination. Appellant further submits that the dependent claims are patentable over the cited references at least per the patentability of the independent base claims from which they depend. Accordingly, Appellant respectfully requests reversal of the rejections with respect to Claims 31 and 35 and the claims that depend therefrom for at least the reasons discussed herein.

C. Dependent Claim 34 is Separately Patentable

As discussed above, the dependent claims are patentable at least per the patentability of the independent claims from which they depend. However, Appellant respectfully submits that dependent Claim 34 is separately patentable over the cited combination.

In particular, as discussed above, Claim 34 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kim in view of Choi and Choo. *See* Final Action, page 7.

Dependent Claim 34 recites:

The portable electronic device of Claim 31, further comprising a camera configured to protrude from the portable electronic device during camera functionality and to retract when not in use, wherein the first through third configurations of the portable electronic device correspond to relative positions of the camera.

In other words, dependent Claim 34 further recites a camera device protruding from the portable electronic device that causes different configurations of the camera. The Final Action points to Choo as providing these additional teachings. *See* Final Action, page 8. As illustrated in Choo, for example, Figure 2, the photographic device 160 is integrated into the device such that it does not protrude. Therefore, Choo does not provide the teachings of a protruding camera that changes the configuration of the device as recited in Claim 34.

Responsive to Appellants arguments, the Advisory Action states:

...Choo teaches position detection of a camera, where the camera changes its position from being blocking view to having full exposure. Thus, the camera is considered as configured to protrude in the configuration of the device.

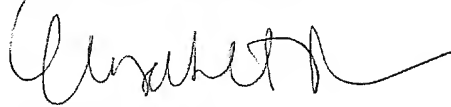
See Advisory Action, Continuation Sheet. Again, the photographic device illustrated in Figure 2 of Choo is integrated into the device and does not protrude. Accordingly, Appellant respectfully submits that dependent Claim 34 is separately patentable over the cited references for at least these additional reasons and, therefore, respectfully request reversal of the rejection thereof.

II. Conclusion

In summary, Appellant respectfully submits that the cited references, alone or in combination, do not teach all of the recitations of the pending claims for at least the reasons discussed herein. Accordingly, Appellant respectfully requests reversal of the rejections of pending claims based on the cited references.

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Respectfully submitted,

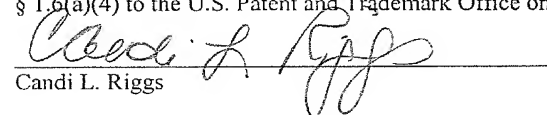


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CERTIFICATION OF TRANSMISSION

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Candi L. Riggs

APPENDIX A – CLAIMS APPENDIX

1. (Previously Presented) A portable electronic device, comprising:
a housing;
an antenna associated with the housing;
a multi-mode matching circuit operatively associated with the antenna, the multi-mode matching circuit being configured to operate in a first mode when the housing of the portable electronic device is in a first configuration and in a second mode when the housing of the portable electronic device is in a second configuration; and
a sensor operatively associated with the multi-mode matching circuit, wherein the sensor is configured to detect the first configuration of the housing of the portable electronic device and/or the second configuration of the housing of the portable electronic device and wherein the multi-mode matching circuit is configured to adjust at least one parameter of the multi-mode matching circuit responsive to the first and/or second detected configurations of the housing of the portable electronic device, and wherein the at least one parameter is stored in a lookup table; and
a processor operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first and/or second detected configuration of the housing of the portable electronic device as a pointer for an entry in the lookup table.
2. (Cancelled).
3. (Previously Presented) The portable electronic device of Claim 1 wherein the multi-mode matching circuit comprises an impedance matching circuit and wherein the at least one parameter of the multi-mode matching circuit comprises a resistance, a capacitance and/or an inductance.
4. (Cancelled).
5. (Previously Presented) The portable electronic device of Claim 1, further comprising a timer circuit operatively associated with the sensor, wherein the sensor is

further configured to detect the first and/or second configuration of the housing of the portable electronic device responsive to expiration of the timer circuit.

6. (Original) The portable electronic device of Claim 1 wherein the portable electronic device comprises a portable electronic device having a flip configuration, wherein the housing of the portable electronic device is in the first configuration when the portable electronic device is open and wherein the housing of the portable electronic device is in the second configuration when the portable electronic device is closed.

7. (Previously Presented) A mobile terminal, comprising:
a housing;
an antenna associated with the housing;
a multi-mode matching circuit operatively associated with the antenna; and
a sensor operatively associated with the multi-mode matching circuit and configured to detect a position of the antenna relative to the housing and/or a configuration of the housing of the mobile terminal, wherein the multi-mode matching circuit is configured responsive to the detected position of the antenna and/or the configuration of the housing of the mobile terminal;
wherein the multi-mode matching circuit is configured to operate in a first mode when the detected position is a first detected position relative to the housing and/or the housing of the mobile terminal is in a first configuration and in a second mode when the detected position is a second detected position relative to the housing and/or the housing of the mobile terminal is in a second configuration,
wherein the multi-mode matching circuit is configured by adjusting at least one parameter of the multi-mode matching circuit responsive to the first and/or second detected position of the antenna and/or the first and/or second configuration of the housing of the mobile terminal, and
wherein the at least one parameter is stored in a lookup table, the mobile terminal further comprising a processor operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first and/or second detected position and/or the first and/or second configuration as a pointer for an entry in the lookup table.

8. (Cancelled).

9. (Previously Presented) The mobile terminal of Claim 7, wherein the multi-mode matching circuit comprises an impedance matching circuit and wherein at least one of the parameter of the multi-mode matching circuit comprises a resistance, a capacitance and/or an inductance.

10. (Cancelled).

11. (Previously Presented) The mobile terminal of Claim 7 further comprising a timer circuit operatively associated with the sensor, wherein in the sensor is further configured to detect the position of the antenna relative to the housing and/or the configuration of the housing of the mobile terminal responsive to expiration of the timer circuit.

12. (Previously Presented) The mobile terminal of Claim 7 wherein the mobile terminal comprises a mobile terminal having a flip configuration, wherein the housing of the mobile terminal is in the first configuration when the mobile terminal is open and wherein the housing of the mobile terminal is in the second configuration when the mobile terminal is closed.

13. (Previously Presented) The mobile terminal of Claim 7 wherein the antenna comprises a retractable antenna, wherein the antenna is in the first position when the retractable antenna is retracted and wherein the antenna is in the second position when the retractable antenna is extended.

14. (Previously Presented) A method of operating a portable electronic device, comprising:

detecting a configuration of a housing of the portable electronic device;

adjusting a multi-mode matching circuit based on the detected configuration of the housing of the portable electronic device, wherein the multi-mode matching circuit is

operatively associated with an antenna of the portable electronic device, wherein adjusting the multi-mode matching circuit comprises adjusting at least one parameter of the multi-mode matching circuit responsive to the detected configuration of the housing of the portable electronic device and wherein the at least one parameter is stored in a lookup table; and

locating the at least one parameter in the lookup table using the detected configuration as a pointer for an entry in the lookup table.

15. (Cancelled).

16. (Previously Presented) The method of Claim 14 wherein adjusting at least one parameter of the multi-mode matching circuit comprises adjusting a resistance, a capacitance and/or an inductance of the multi-mode matching circuit.

17. (Cancelled).

18. (Original) The method of Claim 14 wherein detecting a configuration of the housing of the portable electronic device further comprises repeatedly detecting the configuration of the housing of the portable electronic device responsive to a detected change in position of the housing.

19. (Original) The method of Claim 14 wherein detecting a configuration of the housing of the portable electronic device further comprises periodically detecting the configuration of the housing of the portable electronic device responsive to expiration of a timer circuit.

20. (Original) The method of Claim 14, further comprising:
operating the multi-mode matching circuit in a first mode when the detected configuration is a first detected configuration; and
operating the multi-mode matching circuit in a second mode when the detected configuration is a second detected configuration.

21. (Cancelled).

22. (Previously Presented) A method of operating a mobile terminal, comprising:
detecting a position of an antenna relative to a housing of the mobile terminal and/or a configuration of the housing of the mobile terminal;
configuring a multi-mode matching circuit responsive to the detected position of the antenna and/or the configuration of the housing of the mobile terminal, wherein the multi-mode matching circuit is operatively associated with the antenna of the mobile terminal, wherein configuring the multimode matching circuit comprises adjusting at least one parameter of the multi-mode matching circuit responsive the detected position of the antenna and/or the configuration of the housing of the mobile terminal and wherein the at least one parameter is stored in a lookup table; and
locating the at least one parameter in the lookup table using the detected position and/or configuration as a pointer for an entry in the lookup table.

23. (Cancelled).

24. (Previously Presented) The method of Claim 22 wherein adjusting at least one parameter of the multi-mode matching circuit comprises adjusting a resistance, a capacitance and/or an inductance of the multi-mode matching circuit.

25. (Cancelled).

26. (Original) The method of Claim 22 wherein detecting a position of an antenna relative to a housing of the mobile terminal and/or a configuration of the housing further comprises repeatedly detecting the position and/or configuration responsive to a detected change in position of the antenna relative to the housing and/or a configuration of the housing.

27. (Original) The method of Claim 22 wherein detecting a position of an antenna relative to a housing of the mobile terminal and/or a configuration of the housing further

comprises periodically detecting the position and/or the configuration responsive to expiration of a timer circuit.

28. (Original) The method of Claim 22, further comprising:
operating the multi-mode matching circuit in a first mode when the detected position and/or detected configuration is a first detected position and/or detected configuration; and
operating the multi-mode matching circuit in a second mode when the detected position and/or the detected configuration is a second detected position and/or detected configuration.

29. (Original) The method of Claim 28 wherein the mobile terminal comprises a mobile terminal having a flip configuration, wherein the housing of the portable electronic device is in the first detected configuration when the mobile terminal is open and wherein the housing of the mobile terminal is in the second detected configuration when the mobile terminal is closed.

30. (Original) The method of Claim 28 wherein the antenna comprises a retractable antenna, wherein the antenna is in the first detected position when the retractable antenna is retracted and wherein the antenna is in the second detected position when the retractable antenna is extended.

31. (Previously Presented) A portable electronic device, comprising:
a housing;
an antenna associated with the housing;
a multi-mode matching circuit operatively associated with the antenna, the multi-mode matching circuit being configured to operate in at least three modes corresponding to respective first through third configurations of the housing.

32. (Previously Presented) The portable electronic device of Claim 31 wherein the portable electronic device comprises a portable electronic device having a jack-knife configuration, wherein the first through third configurations of the housing of the portable

electronic device correspond to different positions of the portable electronic device having the jack-knife configuration.

33. (Previously Presented) The portable electronic device of Claim 32, further comprising:

a sensor operatively associated with the multi-mode matching circuit, wherein the sensor is configured to detect the first through third configurations of the housing of the portable electronic device and wherein the multi-mode matching circuit is configured to adjust at least one parameter of the multi-mode matching circuit responsive to the first, second and/or third detected configurations of the housing of the portable electronic device, and wherein the at least one parameter is stored in a lookup table; and

a processor operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first, second and/or third detected configuration of the housing of the portable electronic device as a pointer for an entry in the lookup table.

34. (Previously Presented) The portable electronic device of Claim 31, further comprising a camera configured to protrude from the portable electronic device during camera functionality and to retract when not in use, wherein the first through third configurations of the portable electronic device correspond to relative positions of the camera.

35. (Previously Presented) A method of operating a portable electronic device, comprising:

detecting a configuration of a housing of the portable electronic device; and

adjusting a multi-mode matching circuit based on the detected configuration of the housing of the portable electronic device, wherein the housing of the portable electronic device has at least three configurations, wherein the portable electronic device comprises a portable electronic device having a jack-knife configuration, and wherein the at least three configurations correspond to different configurations of the jack-knife configuration.

36. (Previously Presented) The method of Claim 35, wherein the multi-mode matching circuit is operatively associated with an antenna of the portable electronic device, wherein adjusting the multi-mode matching circuit comprises adjusting at least one parameter of the multi-mode matching circuit responsive to the detected configuration of the housing of the portable electronic device and wherein the at least one parameter is stored in a lookup table; and

locating the at least one parameter in the lookup table using the detected configuration as a pointer for an entry in the lookup table.

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APPENDIX B – EVIDENCE APPENDIX

None

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APPENDIX C – RELATED PROCEEDINGS APPENDIX

None.